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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,078	01/15/2004	Brian Craig Lee	10019978-4	1899

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HEWLETT-PACKARD COMAPNY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

TADESSE, YEWEBDAR T

ART UNIT	PAPER NUMBER
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1734

MAIL DATE	DELIVERY MODE
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05/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/760,078	Applicant(s) LEE ET AL.	
	Examiner Yewebdar T. Tadesse	Art Unit 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6-21,24-32,34 and 37-44 is/are pending in the application.
- 4a) Of the above claim(s) 44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-21,24-32,34 and 37-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 03/14/2007 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of U.S. patent No. 6,702,894 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Specification

2. The disclosure is objected to because of the following informalities: on the first page of the specification, applicants need to include the information about the parent application (including status). Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Percin et al (US 6,474,786). Percin et al discloses (see Figs 1-3 and column 4, lines

Art Unit: 1734

43-47) a fluid ejection cartridge (droplet ejector) for dispensing a bioactive fluid (biomedicine, drug) on the surface comprising a first reservoir (12), containing a bioactive fluid; and a first fluid ejector fluidically coupled to the reservoir wherein the ejector is configured to eject essentially in a drop wise manner, at least a drop of bioactive fluid onto the printing surface. Percin et al's device is capable of dispensing bioactive fluid at the claimed volume onto an ingestible sheet.

5. Claims 1 and 6-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Childers (US 2002/0187248).

As to claim 1, Childers discloses (see Figs 1-2, paragraphs 4) a fluid ejection cartridge (16) for dispensing a bioactive fluid (pharmaceutical does in liquid form) on the surface comprising a first reservoir (18), containing a bioactive fluid; and a first fluid ejector (24) fluidically coupled to the reservoir wherein the ejector is configured to eject essentially in a drop wise manner, at least a drop of bioactive fluid onto the printing surface (26). Childers's device is capable of dispensing bioactive fluid onto an ingestible sheet.

With respect to claims 6-10, Childers discloses (see Figs 1-2 and paragraph 57) a fluid ejection cartridge further comprising a second reservoir (20) capable of containing a barrier component in proximity to the first reservoir and a second fluid ejector fluidically coupled to the second reservoir for dispensing the second component, information storage element (39) and a controller (12).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 6-7, 11-14, 16-18, 31-32, 34,37, 38 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Percin et al (US 6,474,786) as applied to claim 1 above and further in view of Lean et al (US 6,079,814).

As to claims 6-7, 11-14, 31, 32, 34, 37, 38 and 43, Percin et al is silent concerning a drop-firing controller for activating the first fluid ejector wherein the first fluid ejector ejects at least one drop of the bioactive fluid onto the first portion of the sheet and a sheet advancer for advancing the sheet wherein the sheet advancer and the drop-firing controller dispense the fluid on a second portion of the sheet. Lean et al

Art Unit: 1734

discloses (see column 1, lines 20-36, column 3, lines 25-40 and Fig 1-2) a drop-firing controller (printer controller 12) communicating with a plurality of fluid ejection cartridges (printheads 16 having ejectors 42 as an integral unit) and a sheet advancer (input feed rollers 21,22 and a transport belt 14) capable of ejecting fluid onto first and second portions (non-overlapping) of the sheet. It would have been obvious in the art to include a drop-firing controller and a sheet advancer for dispensing fluid onto different portions of the sheet in Percin et al to direct the droplets in the desired direction toward the substrate.

As to claims 16-17, Percin et al discloses two dimensional array droplet ejectors (see Fig 1-3 and Abstract). As to claim 18, Percin et al lacks teaching a sheet tray. Lean et al discloses (see column 3, lines 25-30) input tray for holding at least one sheet. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a sheet tray in Percin et al to feed the sheet onto the sheet transporter so the sheet travels in front of the ejectors.

9. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Percin et al (US 6,474,786) as applied to claim 1 above and further in view of Kneezel et al (US 6,402,280) and Allen (US 5,644,343). Percin et al is silent concerning information storage element storing information about the fluid and the fluid ejector are coupled to a controller. However a fluid ejection system having an information storage element having parameters of the ejected fluid and the ejector that are communicable to a controller is well known in the art to automatically control the quality of the image

Art Unit: 1734

formed; for instance - Kneezel et al discloses (see Fig 5) printhead (20) having a control system in connection with information storage element (RAM, DATA for one line 130) and controller (128). Allen discloses (see Abstract and Fig 1) an ink jet printhead system having a printhead controller (38) controlling the volume of the droplets ejected from the printer by monitoring the temperature of the ink. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an information storage element having parameters of the fluid and the ejector in communication with the controller in Percin et al to precisely control the position of the droplet and the size of the printed spot on the substrate.

10. Claims 15 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Percin et al (US 6,474,786) in view of Lean et al (US 6,079,814) as applied to claim 11 or 20 above and further in view of Hawkins (US 5,300,968). Percin et al teaches (see column 1, lines 34-37) that printers uses bubbles formed by heat pulses to force fluid out of the nozzle and thermal transducers for bulk actuation (see column 4, lines 25-30) Childers and Lean et al (see column 3, lines 41-46) teach the use of thermal printheads, however a heater is not specifically disclosed with the droplet ejector. Hawkins discloses a heater elements included in the printhead (see Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a heater in Percin et al device to force fluid out of the ejector as an alternative type of ejection system as taught in Lean et al.

Art Unit: 1734

11. Claims 19 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Percin et al (US 6,474,786) or in view of Lean et al (US 6,079,814) as applied to claim 11 or 20 above and further in view of Purcell et al (US 6,347,857). Percin et al lacks teaching an image acquisition system. Purcell et al discloses (see Fig 3, column 4, lines 1-28) an image acquisition system (a system having an optical detector 22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an image acquisition system in Percin et al as modified to acquire digital image for the purpose of inspection.

12. Claims 8-9, 39, 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Percin et al (US 6,474,786) in view of Lean et al (US 6,079,814) (or Percin et al alone) as applied to claim 1 or 31 above and further in view of William et al (US 6,596,239). Percin et al and Lean et al lack teaching a storage device, display device and an external or wireless communication network. However it is well known in the art to use such devices to fully automate the system and for easy access. William et al (see Fig 1 and column 18, lines 23-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the claimed communication devices in Percin et al to easily automate and access the fluid dispensing system (typographic error to the name of Percin et al has been corrected).

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Hayes teaches (see column 18, lines 52-58) in dispensing mode

Art Unit: 1734

the volume of a drop within the range of from 100 pico-liters to 1 micro-liter, which is converted to 10^5 - 10^9 femto-liters (overlapping the claimed range of from about 10 femto-liters to about ten micro-liters).

Response to Arguments

14. Applicant's arguments filed 03/14/2007 have been fully considered but they are not persuasive.

As to Election/Restriction requirement, applicants affirm that the two grouping identified by the examiner are patentably distinct in the response filed on 03/14/2007. However, applicants argue this restriction requirement is improper because the search and examination of an entire application can be made without serious burden. This is not found persuasive because as indicated in the restriction requirement and admitted by the applicants that the two inventions are distinct for the reasons described in the action (see Election/restriction paragraph 3) mailed on 11/14/2006. The exact same ingestable dosage can be manufactured by another device different from the claimed apparatus. Additionally, burden to the examiner is not only limited to the searches, but also to the divergent subject matters of the inventions (see paragraph 5).

The requirement is still deemed proper and is therefore made FINAL.

As to the double patenting rejection the examiner withdraws the rejection in view of the appropriately filed terminal disclaimer.

With respect to the art rejections under 102, applicants' argue (see applicants' remarks pages 12 and 14) that Percin and Childers do not disclose an ingestable sheet

Art Unit: 1734

as such applicants' invention (re 1 and 6-10) is not anticipated by Percin et al and Childers. Examiner respectfully disagrees because the fluid ejection cartridge disclosed by Percin et al and Childers are capable of dispensing the bioactive fluid onto the ingestable sheet. It is noted that the ingestable sheet does not add structure to the applicants' claimed device. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus shows all of the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) **Furthermore, "expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim."** *Ex parte Thibault*, 164 USPQ 666,667 (Bd. App. 1969). Thus, the **"inclusion of material or article worked upon does not impart patentability to the claims."** *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 (USPQ 458, 459 (CCPA 1963))). In this case, the inclusion of an ingestable sheet does not impart patentability to the claims.

Examiner withdraws the 103 rejections over Childers in view of others; per applicants' statement that the inventors of the instant application and Childers application are assigned to the Hewlett-Packard Corporation at the time the claimed invention was made (see page 18, applicants' Remarks). However, the 103 rejection of Percin et al in view of others are maintained for at least the reasons described above.

As to claim 43 argument of the claimed volume of the fluid, Percin et al cartridge is capable of being operated at the claimed range of fluid volume. In any event, Hayes

Art Unit: 1734

teaches volume of droplets at the claimed range. Examiner partly agrees with the applicants' comment (see Page 18) that a mistake was made in converting the units - 1 micro-liter, which was supposed to be 10^9 instead of 10^{10} . Yet, the conversion of pico-liters to femto-liters is accurate – 100 pico-liters equals to 10^5 femto-liters). See typographic correction made to the conversion of Hayes's dispensing volume of 100 pico-liters to 1 micro-liter, which is converted to 10^5 - 10^9 femto-liters (overlapping the claimed range of from about 10 femto-liter to about ten micro-liter = 10 - 10^{10} femto-liter).

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yewebdar T. Tadesse whose telephone number is (571)

Art Unit: 1734

272-1238. The examiner can normally be reached on Monday-Friday 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



YTT